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10/596,782	03/31/2007	Paul Schliwa-Bertling	P18527-US1	1414

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EXAMINER	
ZHAO, WEI	

ART UNIT	PAPER NUMBER
2475	

NOTIFICATION DATE	DELIVERY MODE
12/08/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/596,782	SCHLIWA-BERTLING ET AL.	
	Examiner	Art Unit	
	WEI ZHAO	2475	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33-35,37-55 and 57-64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33-35,37-47,52-55 and 57-60* is/are rejected.

7)☒ Claim(s) *48-51 and 61-64* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This communication is considered fully responsive to the Amendment filed on September 23, 2010.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 33-34, 43-46, 52-54 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeffries et al. (US 2004/0062259) in view of Bird et al. (US 6,657,954).

For claim 33, Jeffries et al. teach the method implemented by a network node for controlling a queue buffer, the queue buffer being connected to a link and being

arranged to queue data units of a flow in a queue (paragraph [0023] lines 1-6), comprising the steps of: determining a value of a length parameter related to the length of the queue (paragraph [0005] lines 1-8); comparing the value with a length threshold value (paragraph [0034] lines 23-26); performing a congestion notification procedure if the value is greater than the length threshold value, wherein the congestion notification procedure when performed drops one data unit (paragraph [0004] lines 21-26).

Jeffries et al. teach all the subject matter with the exception of performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop one of the data units; and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue. Bird et al. from the same or similar field of endeavor teach implementing fairness of the method, performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters (column [6] lines 39-52), wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop one of the data units (column [7] lines 14-21); and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow

queued in the queue (column [6] lines 39-52). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Bird et al. in the system of Jeffries et al. The method of Jeffries et al. can be implemented on any type of the method performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop one of the data units; and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue, which is taught by Bird et al. The motivation for using the method of Jeffries et al. on performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop one of the data units; and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue, is to enhance the efficient way for flow control.

For claim 34, Jeffries et al. further teach the method, wherein the one or more flow control parameters are predetermined values (paragraph [0040] lines 1-7).

For claim 43, Jeffries et al. teach the method, further comprising performing a rate-based flow control for the flow in the queue, wherein one of the one or more flow control parameters is a control rate (paragraph [0041] lines 7-17).

For claim 44, Jeffries et al. teach the method, wherein the control rate is introduced by the receiver and expresses a data rate limitation for arriving data units that the receiver can handle (paragraph [0041] lines 7-23).

For claim 45, Jeffries et al. teach the method, wherein the control rate is introduced by the sender and expresses one of a data rate limitation for the rate of data units that the sender can send, a current sending rate and a target sending rate (paragraph [0041] lines 7-23).

For claim 52, Jeffries et al. teach the method, as implemented in a computer program product arranged to execute the method on a programmable data processing device connected to a communication network containing the link (paragraph [0023] lines 1-11).

For claim 46, it is similar to claim 33. Claim 46 is rejected for the same reasons as to claim 33.

For claims 53 and 54, these two claims are similar to claims 33 and 34 individually. Claims 53 and 54 are rejected for the same reasons as applied to claims 33 and 34.

For claim 59, it is similar to claim 33. Claim 59 is rejected for the same reasons as to claim 33.

5. Claims 35, 37-42, 47, 55, 57, 58 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeffries et al. (US 2004/0062259) in view of Bird et al. (US 6,657,954) as applied to claim 33 or 53, and further in view of Meyer et al. (US 2002/0145976).

For claim 35, Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the predetermined values. Meyer et al. from the same or similar field of endeavor teach implementing fairness of the method, wherein the predetermined values are associated with known flow control procedures for one or both of data unit senders and data unit receivers (paragraph [0021] lines 1-4). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the predetermined values, which is taught by Meyer et al. The motivation for using the method of Jeffries et al. and Bird et al. on implementing the predetermined values associated with known flow control procedures is to enhance the efficient way for flow control.

For claim 37, Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the flow control parameters. Meyer et al. from the same or

similar field of endeavor teach implementing fairness of the method, further comprising the steps of introducing the flow control parameter by the receiver and inserting it into acknowledgment data units sent from the receiver to the sender so as to acknowledge the correct receipt of data units (paragraph [0016] lines 1-12). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the flow control parameters into acknowledgment data units, which is taught by Meyer et al. The motivation for using the method of Jeffries et al. and Bird et al. on implementing the flow control parameters into acknowledgement is to provide a mechanism to identify the data received correctly.

For claim 38, Jeffries et al. teach the method, wherein the buffer is provided in a network node of a communication network connecting the sender and the receiver (paragraph [0023] lines 1-6), further comprising the step of extracting, in a procedure for determining the flow control parameter, the flow control parameter from the acknowledgement data units at the network node (paragraph [0005] lines 1-8).

For claim 39, Jeffries et al. teach the method, wherein the buffer is provided in a first network node of a communication network connecting the sender and the receiver (paragraph [0023] lines 1-6), further comprising the steps of: extracting, in a procedure for determining the flow control parameter, the flow control parameter from the acknowledgement data units at a second network node different from the first network node (paragraph [0005] lines 1-8); and sending the flow control parameter from the second network node to the first network node (paragraph [0005] lines 1-8).

For claim 40, Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the flow control for the flow in a window-based queue. Meyer et al. from the same or similar field of endeavor teach implementing fairness of the method, further comprising performing a flow control for the flow in a window-based queue, wherein one of the one or more flow control parameters is a control window (paragraph [0054] lines 1-11). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the flow control for the flow in a window-based queue, which is taught by Meyer et al. The motivation for using the method of Jeffries et al. and Bird et al. on implementing the flow control for the flow in a window-based queue is to provide the flow control mechanism to the data units in a given transmission window.

For claim 41, Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the control window. Meyer et al. from the same or similar field of endeavor teach implementing fairness of the method, wherein the control window is introduced by the receiver and expresses a limitation of how many data units the receiver can handle (paragraph [0054] lines 5-16). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the control window, which is taught by Meyer et al. The motivation for using the method of Jeffries et al. and Bird et

al. on implementing the control window is to provide the flow control mechanism to the data units in a given transmission window.

For claim 42, Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the control window. Meyer et al. from the same or similar field of endeavor teach implementing fairness of the method, wherein the control window is introduced by the sender and expresses a limitation of how many data units the sender can send (paragraph [0054] lines 5-16). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the control window, which is taught by Meyer et al. The motivation for using the method of Jeffries et al. and Bird et al. on implementing the control window is to provide the flow control mechanism to the data units in a given transmission window.

For claim 47, Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the length threshold value derived on the basis of one of the flow control parameters. Meyer et al. from the same or similar field of endeavor teach implementing fairness of the method, wherein the length threshold value is set to a value derived on the basis of one of the flow control parameters if the analyzing step indicates underutilization (paragraph [0054] lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the length threshold value

derived on the basis of one of the flow control parameters, which is taught by Meyer et al. The motivation for using the method of Jeffries et al. and Bird et al. on implementing the length threshold value derived on the basis of one of the flow control parameters is to enhance an efficient way for flow control.

For claim 55, it is similar to claim 35. Claim 55 is rejected for the same reasons as to claim 35.

For claim 57, Jeffries et al. further teach the queue buffer being provided in a network node of a communication network connecting the sender and the receiver, wherein the flow control parameter determinator is arranged for extracting the flow control parameter from the acknowledgement data units at the network node (paragraph [0005] lines 1-8).

Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the flow control parameters into acknowledgment data units. Meyer et al. from the same or similar field of endeavor teach implementing fairness of the method, further comprising: the flow control parameter being introduced by the receiver and inserted into acknowledgment data units sent from the receiver to the sender for acknowledging the correct receipt of data units (paragraph [0016] lines 1-12). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the flow control parameters into acknowledgment data units, which is taught by Meyer et al. The

motivation for using the method of Jeffries et al. and Bird et al. on implementing the flow control parameters into acknowledgement is to provide a mechanism to identify the data received correctly.

For claim 58, Jeffries et al. further teach the queue buffer controller, wherein the queue buffer is provided in a first network node of a communication network connecting the sender and the receiver (paragraph [0023] lines 1-6), wherein the flow control parameter determinator is arranged for receiving the flow control parameter from a second network node at which the flow control parameter was extracted (paragraph [0005] lines 1-8).

Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the flow control parameters into acknowledgment data units. Meyer et al. from the same or similar field of endeavor teach implementing fairness of the method, wherein the flow control parameter is introduced by the receiver and inserted into acknowledgment data units sent from the receiver to the sender for acknowledging the correct receipt of data units (paragraph [0016] lines 1-12). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the flow control parameters into acknowledgment data units, which is taught by Meyer et al. The motivation for using the method of Jeffries et al. and Bird et al. on implementing the flow control parameters into acknowledgement is to provide a mechanism to identify the data received correctly.

For claim 60, Jeffries et al. and Bird et al. teach all the subject matter with the exception of implementing the length threshold value derived on the basis of one of the flow control parameters. Meyer et al. from the same or similar field of endeavor teach implementing fairness of the method, wherein the threshold adaptor is arranged to set the length threshold value to a value derived on the basis of one of the flow control parameters if the analyzer indicates underutilization (paragraph [0054] lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art to implement the method of Meyer et al. in the system of Jeffries et al. and Bird et al. The method of Jeffries et al. and Bird et al. can be implemented on any type of the method implementing the length threshold value derived on the basis of one of the flow control parameters, which is taught by Meyer et al. The motivation for using the method of Jeffries et al. and Bird et al. on implementing the length threshold value derived on the basis of one of the flow control parameters is to enhance an efficient way for flow control.

Allowable Subject Matter

6. Claims 48-51 and 61-64 are objected to as being dependent upon a rejected base claim 33 or 53, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claims 48-51, the prior art in single or in combination, fails to teach "sending, by a sender of the flow in the queue, the data units in a predetermined sequence; sending, by a receiver of the flow in the queue, acknowledgment messages

for acknowledging the correct receipt of the data units, where each acknowledgment message identifies the last data unit correctly received in the sequence; sending, by the receiver to the sender, a first window value expressing a limitation of how many data units the receiver can handle; performing, by the sender, a window-based flow control using a send window, the send window being selected as the minimum of the first window value and a second window value, such that the sender must not send data units with a sequence number higher than the sum of the highest acknowledged sequence number and the send window, and the sender dividing the second window value by two as a reaction to a congestion notification, and thereafter increasing the second window by a predetermined increment for each duplicate acknowledgment message it receives, wherein one of the one or more flow control parameters is the first window value and the length threshold value is initially set equal to the estimated link capacity value, and setting, by the automatic threshold adaptation procedure, the length threshold value equal to the estimated link capacity value if the first window value is greater than 1.5 times the sum of the estimated link capacity value and the momentary value of the length threshold value" in combination with other limitation of the claim(s).

Regarding claims 61-64, the prior art in single or in combination, fails to teach "the sender of the flow in the queue sends the data units in a predetermined sequence; the receiver of the flow in the queue sends to the sender acknowledgment messages for acknowledging the correct receipt of the data units, wherein each acknowledgment message identifies the last data unit correctly received in the sequence, and the receiver further adapted to send to the sender a first window value expressing a

limitation of how many data units the receiver can handle; the sender performs a window-based flow control using a send window, the send window being selected as the minimum of the first window value and a second window value, adapted such that the sender must not send data units with a sequence number higher than the sum of the highest acknowledged sequence number and the send window; the sender further divides the second window value by two as a reaction to a congestion notification, and thereafter increase the second window by a predetermined increment for each duplicate acknowledgment message it receives, wherein one of the one or more flow control parameters is the first window value; and the threshold adaptor arranged to initially set the length threshold value equal to the estimated link capacity value, and to set the length threshold value equal to the estimated link capacity value if the first window value is greater than 1.5 times the sum of the estimated link capacity value and the momentary value of the length threshold value" in combination with other limitation of the claim(s).

Response to Remarks/Arguments

7. Claims Objections: in the Response, filed September 23, 2010 Applicants amended claims for the purpose of correcting the informalities. Therefore, the previous objections to the claims are withdrawn.

8. Claims Rejections: Applicants' arguments filed September 23, 2010 have been fully considered but they are not persuasive.

On pages 10-16 of the Response with respects to claim 33, Applicants assert the prior art doesn't teach "performing an automatic threshold adaptation procedure, wherein the automatic threshold adaptation procedure comprises a .procedure for adjusting the length threshold value on the basis of one or more flow control parameters, wherein the automatic threshold adaptation procedure determines when the congestion notification procedure would be performed to drop or mark one or more of the data units; and determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue."

The prior art teaches to provide **a network device for processing data packets in a communications network, the device comprising a resource associated with a queue of data packets, and an apparatus for managing the data packet queue in accordance with the bandwidth-feedback mechanism** as described herein (paragraph [0023] lines 1-6, Jeffries et al.). Common to all the above **systems employing bandwidth feedback is that the feedback signal is based on average queue length, and this is then used directly to determine packet drop rates**. **While average queue length provides a useful indication of congestion status, using this directly to determine drop rates makes it difficult for network administrators to determine the correct parameter settings** for operation of real networks (paragraph [0005] lines 1-8, Jeffries et al.). **The availability of bandwidth is indicated by a bandwidth indicator which is generated by controller 6 by comparing the queue occupancy (represented here by the queue length L.sub.Q) with a**

threshold value (paragraph [0034] lines 23-26, Jeffries et al.). Congestion notifications are generated by core nodes using a queue-length thresholding technique based on a modified form of the RED (Random Early Detection) system. RED is an active queue management technique wherein an average queue length is compared with a minimum and a maximum threshold (paragraph [0004] lines 21-26, Jeffries et al.).

The prior art further teach the techniques to monitor indicators of network conditions at a receiver component. **When specific conditions are detected, the receiver adapts its threshold according to algorithms** defined herein. As stated previously, a **threshold is a value used by a receiver to determine whether the sender needs to increase or decrease the rate at which it puts data traffic into the network (Examiner's Notes: the "receiver" as an element in the network has the same function as "network node" in the instant application)**. The receiver compares an accumulated delay change sum (see FIG. 3) to the threshold value, and uses the result to respond to the sender's request for flow control feedback. Prior art receiver thresholds used static values. The dynamic threshold adaptation of the present invention enables the receiver to more accurately respond to the sender's requests for feedback (column [6] lines 39-52, Bird et al.). **This monitor also detects the presence or absence of congestion in the network, and adjusts the threshold in response**. A higher threshold is used when the network is not congested, so that more increase messages will be sent to the sender, requesting the sender to increase its transmission rate. Conversely, the threshold is lowered when congestion is detected, so that the sender will decrease the transmission rate **(Examiner's Notes: this feature teaches**

the same functions "determining, in a procedure, one or more of the one or more flow control parameters from a flow control parameter introduced by one of a sender and a receiver of the flow queued in the queue" as described in the instant application) (column [7] lines 14-21, Bird et al.).

Based on the fact, Examiner respectfully disagrees that the prior art cited does not teach the independent claim 33 as mentioned by Applicants. Independent claim 53 sets forth similar elements as claim 33's, so the prior art teaches claim 53. Furthermore, the cited passages teach dependent claims 34, 35, 37-47, 52-55, and 57-60 as well.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEI ZHAO whose telephone number is (571)270-5672. The examiner can normally be reached on Monday-Thursday, 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dang Ton can be reached on 571-272-3171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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